



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/664,146

09/17/2003

Hongyong Zhang

1117.68308

3479

7590

06/14/2004

Patrick G. Burns
Greer, Burns & Crain, Ltd.
Suite 2500
300 South Wacker Drive
Chicago, IL 60606

EXAMINER

SMOOT, STEPHEN W

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/664,146	ZHANG ET AL.	
	Examiner	Art Unit	
	Stephen W. Smoot	2813	

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28,29 and 31 is/are allowed.
- 6) ☒ Claim(s) 22-27,30 and 32-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/277,880.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>9-17-03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is in response to application papers filed on 17 September 2003.

Drawings

1. The proposed drawing correction to Fig. 8A filed on 17 September 2003 is approved. A replacement drawing sheet featuring this correction is required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: CMOS-Type Thin Film Semiconductor Device and Method of Fabricating the Same.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

4. The disclosure is objected to because of the following informality:

Update the first sentence of the specification to indicate that US Application Serial Number 09/277,880 is now US Patent Number 6,635,521.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 22-27, 30, 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 22, lines 8-11, the term "including CMOS transistors each of which comprises p- and n- type thin film transistors and which have different operating voltages" does not particularly point out if each CMOS transistor has a different

operating voltage or if the operating voltage corresponding to the p-type transistors is different from that corresponding to the n-type transistors.

In claim 23, lines 8-11, the term "including CMOS transistors each of which comprises p- and n- type thin film transistors and which have different operating voltages" does not particularly point out if each CMOS transistor has a different operating voltage or if the operating voltage corresponding to the p-type transistors is different from that corresponding to the n-type transistors.

Claim 23 recites the limitation "the other part" in line 30. There is insufficient antecedent basis for this limitation in claim 23.

Claims 24-27 are rejected under 35 U.S.C. 112, second paragraph, because they depend on claim 23.

Claim 30 recites the limitation "the difference in width" in line 8. There is insufficient antecedent basis for this limitation claim 30.

In claim 32, lines 9-12, the term "comprising CMOS transistors in each of which p- and n- type thin film transistors are formed and which have different operating voltages" does not particularly point out if each CMOS transistor has a different operating voltage or if the operating voltage corresponding to the p-type transistors is different from that corresponding to the n-type transistors.

In claim 33, lines 9-12, the term "comprising CMOS transistors in each of which p- and n- type thin film transistors are formed and which have different operating voltages" does not particularly point out if each CMOS transistor has a different

operating voltage or if the operating voltage corresponding to the p-type transistors is different from that corresponding to the n-type transistors.

Claims 34-35 are rejected under 35 U.S.C. 112, second paragraph, because they depend on claim 32.

Allowable Subject Matter

7. Claims 28-29, 31 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter: Claims 28-29, 31 are allowed because the prior art of record does not teach or suggest, in combination with the other claim limitations, a CMOS device that features p-type thin film transistors with p-doped channel regions and n-type thin film transistors with p-doped channel regions, wherein the channel regions corresponding to the n-type thin film transistors have a higher concentration of p-type impurities.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamazaki et al. ('876), Oka et al., and Takenaka (JP 9-270521 A), teach thin film transistors that feature a non-selectively boron-doped active layer. Yamazaki et al. ('132) teach a CMOS structure that features a selectively boron-doped

active layer corresponding to a p-type thin film transistor. Takenaka (JP 9-186343 A) teaches a CMOS structure that features a selectively boron-doped active layer corresponding to an n-type thin film transistor.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen W. Smoot whose telephone number is 571-272-1698. The examiner can normally be reached on M-F (8:00am to 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr. can be reached on 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SWS

Stephen W. Smoot
Patent Examiner
Art Unit 2813